- DRAFT -
TECHNICAL MEMORANDUM

To: Honorable Mayor and City Council, City of College Station
From: Capital Improvements Advisory Committee and HDR Engineering, Inc.
Date: December 16, 2010
Re: Land Use and Capital Improvements Information Underlying Possible Water and Wastewater Impact Fees for the City of College Station

1.0 Background

An impact fee is a one-time, up-front payment made by new development or redevelopment made to a utility (or city) to help offset the cost of providing infrastructure to service that growth. As a result, the utility "rate base" supports less of those costs of growth which helps avoid rate increases due to that capital funding. In other words, an impact fee helps make growth better pay for itself, so that existing rate-payers do not carry the full burden of funding those improvements.

The City of College Station currently charges water and sewer impact fees in four, relatively small, non-contiguous portions of the City (see Figure 1). Thus, only a small portion of new development or redevelopment across the City contributes fee proceeds toward offsetting the costs of utility infrastructure needed to provide them service. As a result, the current limited application of the fee tool does not have much effect in reducing capital costs for growth paid for through the rates, and an inequitable situation has resulted where some pay the fee and many do not.

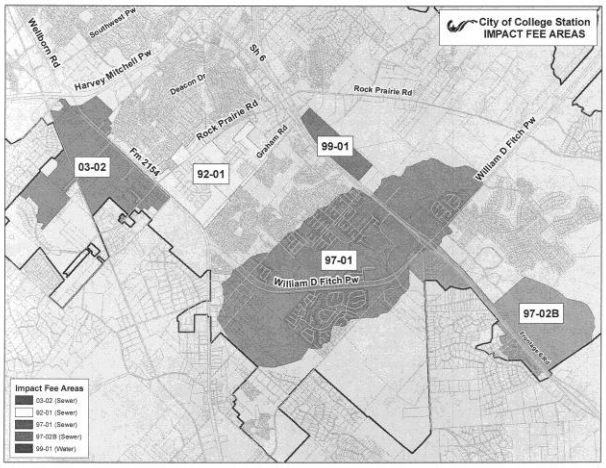


Figure 1
Areas of College Station
Where Water and Sewer Impact Fees are Currently Levied

The City's Planning and Zoning Commission (P&Z) also acts as the City's Capital Improvements Advisory Committee (CIAC) for impact fees, a required advisory body called for in the applicable governing statute of Chapter 395 of the Texas Local Government Code. Among other things, the CIAC is tasked by the statute and City Council to review for *reasonableness* the land use and planning information that underlie the forecast of utility service demand, an assessment of adequacy of current capacity and identification of existing excess capacity, and development and costing of a water and wastewater capital improvement program (CIPs) to meet future needs within a 10-year planning horizon (2011-2020).

The weighted average cost of this existing excess utility capacity and future utility needs is the initial cost basis underlying the fee calculation. Further adjustments to this weighted average cost are then made to determine the maximum impact fee that could be charged.

As the City does not currently have impact fees in large portions of its municipal jurisdiction, this consideration of citywide impact fees is being viewed as a "first time" adoption, which under statutory provisions, requires a two-step public review process. As embodied in this Technical Memorandum, the CIAC has reviewed the land use and capital planning information underlying the fee calculations, and hereby report that information to City Council and provide our opinion that this report is reasonable and useful information.

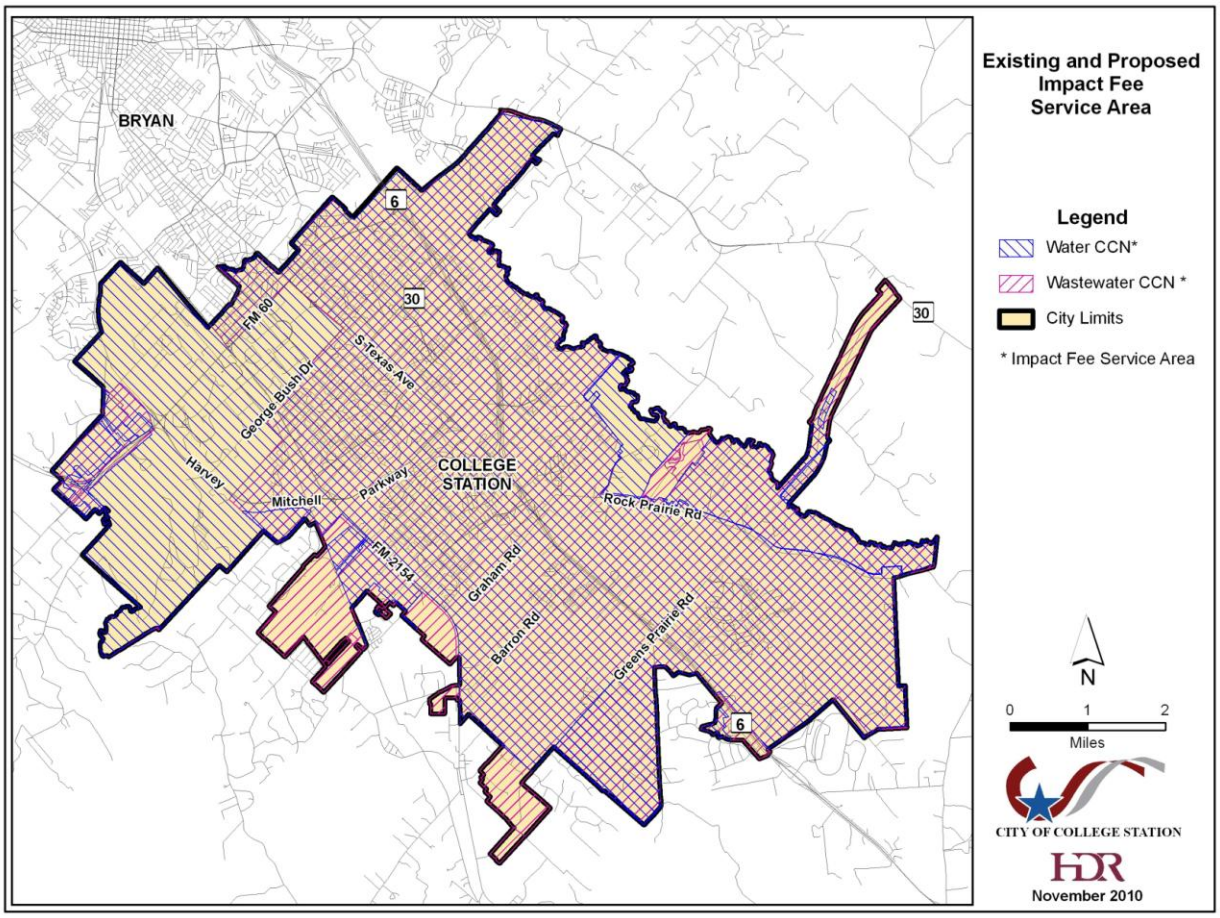
The next step required by State law is for City Council to set a Public Hearing date and provide for 30-day advance newspaper notice to seek public comment on the planning and CIP data.

Subsequent to the receipt of public comment and closing of the 1st Public Hearing, the CIAC may then make any relevant adjustments to the underlying planning data and proceed to the calculation of the maximum water and wastewater fee amounts that could be charged. This results in a final CIAC report to City Council, which is then the basis for setting a date and providing notice for a second public hearing on the maximum potential fee amount and what amount, equal to or lesser than the maximum, might be adopted as the applicable fees.

Again, this Technical Memorandum constitutes the CIAC's first report to City Council on its opinion of the reasonableness of the land use assumptions, resulting service demands, and capital improvements project and cost information that will be used to later determine the maximum impact fee amounts.

2.0 Utility Fee Application Area

In consultation with staff, the potential impact fee service area (i.e. the area where impact fees would be charged if City utility service is provided) was identified as the City's existing and proposed state-certificated water and wastewater service boundaries within the City limits, as shown in the figure below. There are some limited areas within the City where some utility service is supplied by other providers. Only the applicable City-provided service fee would be charged in these joint service areas.



3.0 LAND USE ASSUMPTIONS

Table 1 provides an estimate of the current land uses and forecast of future land use patterns within the impact fee service area. The current land use information was compiled from the Brazos County Central Appraisal District's parcel file for the area within the City's existing and proposed water and wastewater CCNs within the City limits. As indicated, the overall area encompasses 18,396 acres for the Water CCN and 22,276 acres for the Sewer CCN within the City limits and is about 60% to 65% developed. Residential land uses comprise about 45% to 46% of the area and commercial/institutional land uses representing about 18% to 19% of the total area.

TABLE 1
CURRENT AND PROJECTED LAND USE
CITY OF COLLEGE STATION

	Current		2020	
ITEM	**Acres**	**%**	**Acres***	**%**
Water Service Area				
Residential	8,543	46.4%	10,031	54.5%
Commercial	3,432	18.7%	3,680	20.0%
Instititional	3	0.0%	6	0.0%
Undeveloped	6,419	34.9%	4,680	25.4%
Total Land Use Acreage	**18,396**	**100.0%**	**18,396**	**100.0%**
Wastewater Service Area				
Residential	10,058	45.2%	12,492	56.1%
Commercial	3,551	15.9%	4,506	20.2%
Instititional	248	1.1%	742	3.3%
Undeveloped	8,420	37.8%	5,929	26.6%
Total Land Use Acreage	**22,276**	**100.0%**	**22,276**	**106.3%**

	gallons per acre per day			
Reflects unit **water** use of:	1,100	Residential	1,056	Residential
	1,200	Non-Residential	1,152	Non-Residential
	gallons per acre per day			
Reflects unit **wastewater** use of:	660	Residential	634	Residential
	720	Non-Residential	691	Non-Residential

Future land uses were derived from the City's Comprehensive Plan and represents the ultimate designated land uses at build-out identified in the Plan. Since the area contained within the impact fee service area is within the City limits, it is assumed that much of the development of this area will occur within the next ten year planning horizon, although redevelopment and intensification will continue to occur over time. So by the year 2020, it is assumed that approximately 85% of the impact fee service will be developed with residential land uses expected to total about 55% of the area and commercial and institutional uses about 20% to 23% of the impact fee service area by that time.

4.0 CURRENT AND PROJECTED UTILITY DEMAND AND SUPPLY

A typical single family residential house in College Station is issued a ¾" inlet-diameter water meter. For our planning purposes, this is considered to be one Living Unit Equivalent (1 LUE). The American Water Works Association (AWWA) tests various water meter types and sizes to determine their maximum continuous rated flow capability. The higher flow rates for larger water meters can be stated in terms of a LUE multiple of the flow capability of the smaller standard residential meter. For this reason, the LUE concept is a useful tool for being able to apply a base impact fee amount for one LUE to service requests of varying meter sizes.

Table 2 indicates the number of current water and wastewater utility connections by water meter size, the LUE conversion factor for each meter size, and the number of equivalent LUEs for the meters.

TABLE 2
SERVICE UNIT CONVERSION FACTORS
CITY OF COLLEGE STATION

Meter Size	Living Units Equivale (LUEs) per Meter (a)	Number of Meters in 2010 (b)	Number of LUEs in 2010
WATER			
5/8"	0.67	-	-
3/4"	1.00	20,805	20,805
1"	1.67	970	1,617
1.5"	3.33	529	1,763
2"	5.33	539	2,875
3"	10.67	128	1,365
4"	16.67	32	533
6"	33.33	5	167
8"	106.67		-
10"	166.67		-
Total Water		**23,008**	**29,125**
WASTEWATER			
5/8"	0.67	-	-
3/4"	1.00	27,465	27,465
1"	1.67	978	1,630
1.5"	3.33	533	1,778
2"	5.33	543	2,898
3"	10.67	129	1,376
4"	16.67	32	538
6"	33.33	5	168
8"	106.67	-	-
10"	166.67	-	-
Total Wastewater		**29,686**	**35,853**

(a) Derived from AWWA C700-C703 standards for continuous rated flow performance scaled to 5/8" meter.

(b) Source: City of College Station., November 2010.

Tables 3 and 4 summarize the City's current and projected water and wastewater service demands within the impact fee service area and existing utility capacity by type of facility. The projected growth of the utility system and service demand reflect an average of about 500 new LUEs per year on the water system and 600 LUEs per year on the sewer system. They also reflect an average growth rate over 10 years, a portion of which in the near-term is being affected by the economic slow-down. The forecasts also reflect average day and peak day water conservation savings anticipated to be realized by the year 2020.

As indicated in Tables 3 and 4, the current and future level of utility demand differs between water and/or wastewater service, due to the differing service area configurations and the difference between water use and wastewater return flows. For instance, some developments in the City use municipal wastewater service, but not water. The number of wastewater service connections should exceed that of water connections due to other water utility providers' certificated service areas somewhat limiting the growth of the City's future water service area.

Current and future service demands are also compared with the *existing* service capacity of the utility systems. Please note that the existing capacity numbers in Tables 3 and 4 are held constant from 2011 to 2020, to demonstrate what the shortfalls would be if no capacity increases were made. If a deficit is shown for existing or future conditions, this typically implies the need for a capacity expansion of some kind somewhere in the service area. However in this simple mathematical presentation, the presence of a surplus of capacity does not, in and of itself, imply that adequate service capability exists *at every location* within the service area. Sometimes, the available excess capacity is not in the right geographical location to provide adequate service to the area in need, and new facility improvements are still required.

TABLE 3
EST. WATER SERVICE DEMAND & AVAILABLE CAPACITY
CITY OF COLLEGE STATION

Facilty Type	2011	2020	
Supply			
Existing 2011 Capacity (mgd)	26.9	26.9	
Est. Service Demand	26.5	28.5	
Excess (Deficiency)	0.3	(1.6)	
Existing 2011 Capacity (LUEs) *	29,505	32,183	
Est. Service Demand	29,125	34,125	
Excess (Deficiency)	380	(1,942)	
Treatment			
Existing 2011 Capacity (mgd)	31.7	31.7	
Est. Service Demand	29.5	34.5	
Excess (Deficiency)	2.2	(2.9)	
Existing 2011 Capacity (LUEs) *	31,293	31,293	
Est. Service Demand	29,125	34,125	
Excess (Deficiency)	2,168	(2,832)	
Pumping			
Existing 2011 Capacity (mgd)	31.7	31.7	
Est. Service Demand	38.4	41.3	
Excess (Deficiency)	(6.8)	(9.6)	
Existing 2011 Capacity (LUEs) *	24,009	26,188	
Est. Service Demand	29,125	34,125	
Excess (Deficiency)	(5,116)	(7,937)	
Ground Storage			
Existing 2011 Capacity (mg)	8.0	8.0	
Est. Service Demand	6.8	7.6	
Excess (Deficiency)	1.2	0.4	
Existing 2011 Capacity (LUEs) *	34,188	35,987	
Est. Service Demand	29,125	34,125	
Excess (Deficiency)	5,063	1,862	
Elevated Storage			
Existing 2011 Capacity (mg)	5.0	5.0	
Est. Service Demand	4.2	4.7	
Excess (Deficiency)	0.8	0.3	
Existing 2011 Capacity (LUEs) *	34,722	34,722	
Est. Service Demand	29,125	34,125	
Excess (Deficiency)	5,597	597	
Transmission			
Existing 2011 Capacity (mgd)	85.1	85.1	
Est. Service Demand	38.4	41.3	
Excess (Deficiency)	46.7	43.8	
Existing 2011 Capacity (LUEs) *	64,494	64,494	
Est. Service Demand	29,125	34,125	
Excess (Deficiency)	35,369	30,369	
* Assume a conversion factor of :	910	834	gpd/LUE for water supply
	1,012	928	gpd/LUE for treatment
	1,320	1,210	gpd/LUE for pumping
	234	222	gals/LUE for ground storage
	144	137	gals/LUE for elevated storage
	1,320	1,210	gpd/LUE for transmission

TABLE 4
EST. WASTEWATER SERVICE DEMAND & AVAILABLE CAPACITY
CITY OF COLLEGE STATION

Facilty Type	2011	2020	
Treatment			
Existing 2011 Capacity (mgd)	11.5	11.5	
Est. Service Demand	6.8	8.0	
Excess (Deficiency)	4.7	3.5	
Existing 2011 Capacity (LUEs) *	60,209	60,209	
Est. Service Demand	35,853	41,853	
Excess (Deficiency)	24,356	18,356	
Pumping			
Existing 2011 Capacity (mgd)	8.5	8.5	
Est. Service Demand**	2.1	4.8	
Excess (Deficiency)	6.4	3.7	
Existing 2011 Capacity (LUEs) *	14,834	14,834	
Est. Service Demand	3,585	8,371	
Excess (Deficiency)	11,249	6,464	
Interceptors			
Existing 2011 Capacity (mgd)	22.7	22.7	
Est. Service Demand	20.5	24.0	
Excess (Deficiency)	2.2	(1.3)	
Existing 2011 Capacity (LUEs) *	39,651	39,651	
Est. Service Demand	35,853	41,853	
Excess (Deficiency)	3,798	(2,202)	
* Assume LUE conversion factor of :	191	191	gpd/LUE for wastewater treatment
	573	573	gpd/LUE for wastewater pumping
	573	573	gpd/LUE for interceptors
**Assumes	10%	20%	of WW service demand pumped

5.0 INDENTIFIED MAJOR CAPITAL IMPROVEMENT NEEDS AND COSTS

There is adequate existing ground and elevated water storage to meet the future 10-year demand. However, given the prospective growth facing the City in the next ten years, additional water infrastructure capacity is needed for water supply, treatment (chlorination), pumping, and transmission pipelines. Also, two new major water transmission mains are identified to provide additional service capacity to certain locations within the City. Since it is difficult to forecast where and when developer requests for new "approach" mains may arise, an allowance was also made for miscellaneous transmission mains. With this included, the City will have the flexibility to use impact fee proceeds, if available, for oversizing of approach mains, so as to not unintentionally delay a project's approval because of the lack of oversizing funding.

College Station will also need capacity improvements to its wastewater system, including an increase in wastewater pumping capacity through upgrades to existing lift stations and construction of new lift stations to serve newly developing areas. Similarly, various existing interceptor lines will need to be upgraded as well as the extension of new lines into developing areas. Similar to water, an allowance for miscellaneous interceptors was also included in the calculation of the wastewater fee to assist in funding unexpected oversizing of approach mains.

As allowed in Chapter 395 of the Local Government Code, the impact fee may consider both existing excess capacity and facility improvements to be funded within a future 10-year planning horizon. Existing and future water and wastewater utility facilities that accomplish these service capacity goals are identified in Tables 5 and 6, along with their cost, capacity, unit cost, and allocation of existing and projected demand to these facilities.

Existing facilities were valued using data from the City's fixed assets model. New facilities, their sizing, timing, and costs were identified by the City staff and the City's consulting engineer. Costs for new facilities were projected to the expected date of construction. A weighted unit cost of service is then calculated by facility type, based on a proportionate share of use of existing excess capacity and new capacity by growth over the ten year planning period.

As indicated at the bottom of Tables 5 and 6, the weighted average capital cost of service for water is $2,659 per Living Unit Equivalent (LUE) and $1,822 per LUE for wastewater or a total of $4,481 per LUE for combined water and wastewater service. These numbers represent the *weighted capital cost* of a new utility connection, considering both existing excess capacity and new capacity costs needed to meet that growth. *It should be emphasized that these weighted capital costs per LUE quoted above do not yet represent the calculated maximum impact fees.* The statute also requires that future contributions for capital made by new customers through monthly rate payments be considered in reducing the full capital cost amount..

TABLE 5
WATER CAPITAL IMPROVEMENTS PLAN INVENTORY AND COSTING
CITY OF COLLEGE STATION

Facility Name	Construction Cost	Capacity Total	Capacity LUEs	Construction Cost per LUE	Facility Capacity Allocations (LUEs) Existing Customers	Growth Use in Next 10 Years	Excess Capacity after 10 Years	Total Capacity
WATER SUPPLY								
EXISTING FACILITIES		peak day mgd						
Existing Supply	$ 23,933,716	26.850	32,183		29,125	3,058	-	32,183
Subtotal Existing Facilities	$ 23,933,716	26.850	32,183	$ 744	29,125	3,058	-	32,183
FUTURE FACILITIES								
Wells #8, #9, and #10	$ 27,545,225	9.780	11,723		-	1,942	9,781	11,723
Subtotal Future Facilities	$ 27,545,225	9.780	11,723	$ 2,350	-	1,942	9,781	11,723
TOTAL WATER SUPPLY	$ 51,478,941	36.630	43,906		29,125	5,000	9,781	43,906
		AVERAGE CAPITAL COST PER NEW LUE =		**$ 1,367**				
WATER TREATMENT								
EXISTING FACILITIES		peak day mgd						
Existing Chlorination	$ 105,481	31.680	31,293		29,125	2,168	-	31,293
Subtotal Existing Facilities	$ 105,481	31.680	31,293	$ 3	29,125	2,168	-	31,293
FUTURE FACILITIES								
Expanded Sandy Point Road Chlorination	$ 1,698,964	10.080	10,860	$ 156	-	2,832	8,028	10,860
Subtotal Future Facilities	$ 1,698,964	10.080	10,860	$ 156	-	2,832	8,028	10,860
TOTAL WATER TREATMENT	$ 1,804,445	41.760	42,153		29,125	5,000	8,028	42,153
		AVERAGE CAPITAL COST PER NEW LUE =		**$ 90**				
WATER PUMPING								
EXISTING FACILITIES		peak hour mgd						
	$ 6,416,278	31.680	26,188		26,188	-		26,188
Subtotal Existing Facilities	$ 6,416,278	31.680	26,188	$ 245	26,188	-	-	26,188
FUTURE FACILITIES								
Expand Dowling Road Pump Station	$ 2,650,000	10.080	8,333		2,937	5,000	395	8,333
Subtotal Future Facilities	$ 2,650,000	10.080	8,333	$ 318	2,937	5,000	395	8,333
TOTAL WATER PUMPING	$ 9,066,278	41.760	34,520		29,125	5,000	395	34,520
		AVERAGE CAPITAL COST PER NEW LUE =		**$ 318**				
GROUND STORAGE								
EXISTING FACILITIES		mg						
Existing GS Tanks	$ 6,210,086	8.000	35,987		29,125	5,000	1,862	35,987
Subtotal Existing Facilities	$ 6,210,086	8.000	35,987	$ 173	29,125	5,000	1,862	35,987
FUTURE FACILITIES								
n.a.			-					
Subtotal Future Facilities	$ -	-	-	$ -	-	-	-	-
TOTAL GROUND STORAGE	$ 6,210,086	8.000	35,987		29,125	5,000	1,862	35,987
		AVERAGE CAPITAL COST PER NEW LUE =		**$ 173**				
ELEVATED STORAGE								
EXISTING FACILITIES		mg						
Existing ES Tanks	$ 3,409,446	5.000	34,722		29,125	5,000	597	34,722
Subtotal Existing Facilities	$ 3,409,446	5.000	34,722	$ 98	29,125	5,000	597	34,722
FUTURE FACILITIES								
n.a.			-					
Subtotal Future Facilities	$ -	-	-	$ -	-	-	-	-
TOTAL ELEVATED STORAGE	$ 3,409,446	5.000	34,722		29,125	5,000	597	34,722
		AVERAGE CAPITAL COST PER NEW LUE =		**$ 98**				
TRANSMISSION								
EXISTING FACILITIES		peak hour mgd						
Existing Transmission	$ 47,673,987	85.100	64,494		29,125	3,000	32,369	64,494
Subtotal Existing Facilities	$ 47,673,987	85.100	70,347	$ 678	29,125	3,000	38,222	70,347
*FUTURE FACILITIES**								
24" Pipeline along Old Welborn and WDF	$ 4,653,000							
18" Pipline along Texas Avenue	$ 1,757,250							
Misc. Transmission Lines	$ 2,500,000							
Subtotal Future Facilities	$ 8,910,250	22.820	17,294	$ 515	-	2,000	15,294	17,294
TOTAL TRANSMISSION	$ 56,584,237	107.920	87,641		29,125	5,000	53,516	87,641
		AVERAGE COST PER NEW LUE =		**$ 613**				
WATER TOTAL	$ 128,553,432							
		AVERAGE CAPITAL COST PER NEW LUE =		**$ 2,659**				

TABLE 6
WASTEWATER CIP INVENTORY AND COSTING
CITY OF COLLEGE STATION

Facility Name	Construction Cost	Capacity Total	Capacity LUEs	Construction Cost per LUE	Facility Capacity Allocations (LUEs) Existing Customers	Growth Use in Next 10 Years	Excess Capacity after 10 Years	Total Capacity
TREATMENT								
EXISTING FACILITIES		mgd						
Existing WWTPs	$ 27,026,657	11.500	60,209	$ 449	35,853	6,000	18,356	60,209
Subtotal Existing Facilities	$ 27,026,657	11.500	60,209	$ 449	35,853	6,000	18,356	60,209
FUTURE FACILITIES								
n.a.			-					
Subtotal Future Facilities	$ -	-	-	$ -	-	-	-	-
TOTAL WASTEWATER TREATMENT	$ 27,026,657	11.500	60,209		35,853	6,000	18,356	60,209
		AVERAGE CAPITAL COST PER NEW LUE =		**$ 449**				
PUMPING		7.420						
EXISTING FACILITIES		mgd						
Existing Lift Stations	$ 3,309,208	8.500	14,834		3,585	2,393	8,856	
Subtotal Existing Facilities	$ 3,309,208	8.500	14,834	$ 223	3,585	2,393	8,856	14,834
FUTURE FACILITIES								
Upgrade Existing Lift Stations	$ 937,500	1.800	3,141	$ 298		1,436	1,706	
New Lift Stations	$ 1,041,667	1.500	2,618	$ 398		957	1,661	
Subtotal Future Facilities	$ 1,979,167	3.300	5,759	$ 338	-	2,393	3,367	5,759
TOTAL PUMPING	$ 5,288,374	11.800	20,593		3,585	4,785	12,223	20,593
		AVERAGE CAPITAL COST PER NEW LUE =		**$ 281**				
INTERCEPTORS								
EXISTING FACILITIES		mgd						
Existing Interceptors	$ 24,019,480	22.720	39,651		35,853	3,300	498	39,651
Subtotal Existing Facilities	$ 24,019,480	22.720	39,651	$ 606	35,853	3,300	498	39,651
FUTURE FACILITIES								
Future Line Segment 1-71	$ 17,699,000							
Misc. Interceptor Lines	$ 2,500,000					2,700		
Subtotal Future Facilities	$ 20,199,000	6.861	11,974	$ 1,687	-	2,700	9,274	11,974
TOTAL INTERCEPTORS	$ 44,218,480	29.581	51,625		35,853	6,000	9,772	51,625
		AVERAGE CAPITAL COST PER NEW LUE =		**$ 1,092**				
WASTEWATER TOTAL	$ 76,533,510							
		AVERAGE CAPITAL COST PER NEW LUE =		**$ 1,822**				

The land use, planning, and capital improvements data presented previously in this Technical Memorandum constitutes the information required by statute to be first considered by the Advisory Committee and provided to Council for a 1st Public Hearing. It may be amended based on comments received.

The land use and capital improvements information, contained in this Memorandum, will be later coupled with the "rate credit" consideration, calculation of the maximum impact fees, and other policy considerations into a subsequent final Advisory Committee report to the City Council, which will be the basis for the 2nd Public Hearing to be called by Council. Council may elect to take ordinance action after the closing of the 2nd Public Hearing.